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ABSTRACT

A study was undertaken at Bronx Community College (BCC) to: (1) examine the relationship between feelings of powerlessness and academic success at the college level; and (2) assess the relationship between powerlessness and background variables such as students' race, sex, age, socio-economic status, and family characteristics. A biographical data questionnaire and Rotter's Internal-External Control Scale (which measures the extent to which individuals believe their lives to be under their own control) were administered to two groups of students in BCC's College Discovery program. These groups were composed of high achievers with grade point averages (GPA's) between 2.99 and 3.99 (N=44) and low achievers with GPA's between 0.00 and 1.99 (N=41). Scores on the Rotter scale were then correlated with students' GPA and background characteristics. The study revealed no statistically significant difference in the locus of control of high achievement and low achievement students. It also revealed that of the background variables, mother's employment status was the most statistically significant predictor of internal control orientation, followed by mother's educational level and occupational status. The study report includes a review of the literature on locus of control and discussions of the implications of study findings for program policy and structure and counseling. (HB)

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LOCUS OF CONTROL AND ITS ANTECEDENT CORRELATES AMONG HI-ACH AND LO-ACH COLLEGE DISCOVERY STUDENTS

By: Emilio Santa Rita

This study had two major goals. First, the investigation examined the relationship between locus of control personality orientations and achievement on the college level by students in the College Discovery Program. Second, by examining antecedent conditions and characteristics of students, an attempt was made to extract alternative pathways of single-or multiple-linkaged hypotheses. Such a concurrent model will predict which correlate constricts or allows for the development of an internal control orientation.

CD students (Hi-Ach = 44; Lo-Ach = 41) were asked to respond to a questionnaire. Included was a demographic personal data form and Rotter's I-E Scale. Primary results indicated that there is no statistically significant difference in the locus of control orientations of CD students classified as Hi-Ach and Lo-Ach. However, for disadvantaged students (of minimal social position), the construct appears to be more complex than a simple dichotomy between internal and external control orientations. Forces at work may really be beyond the students' control.

For the second research hypothesis, stepwise regression equations were calculated for internal-external control orientations of the CD sample. The regression coefficients indicated that the best predictor for internal control orientation was mother's employed status. Students with working mothers are high internals as a result of an internalized image of a model -- a successful and achieving mother role.

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The Problem

There is research evidence which indicates that there are subtle and complicated factors which seem to be operative in blocking or releasing the academic potential of socially-disadvantaged students. Among these so-called "non-intellectual" variables, the feeling of control over one's destiny has been identified as a significant factor related to the success of disadvantaged students. The absence of this feeling of potency gives rise to a sense of powerlessness which may be thought of as the anticipation of a lack of contingency between one's behavior and the outcomes of that behavior.

The present study examines the relationship of powerlessness to academic success at the college level. Another concern of the study is the linkage of the pervasive feelings of powerlessness or lack thereof with the antecedent correlates in the social environment of the student.

Significance of the Study

During the last decade or more, there has been a proliferation of compensatory education programs at the college level. These programs, like College Discovery at the Bronx, include various combinations of the following practices: remedial studies, tutoring, extensions of the two-year programs, and special counseling and guidance services. There is some evidence which suggests that these traditional modes of intervention which focus on cognitive functioning may, in fact, not be responsible for the improved performance of disadvantaged students. Rather, various non-intellectual factors in the affective domain may be the principal variables influencing the successful movement of disadvantaged students through collegiate programs of compensatory education. Somehow the emotional domain is avoided and programs concern themselves with "plugging" the cognitive deficits.

This study does not contend that cognitive and affective domains are mutually exclusive, but rather that changes in the affective domain represent something of a necessary precondition to maximum growth in one's cognitive functioning. The affective areas of development may be far more amenable to change than the cognitive areas and that when significant changes in the quality of intellectual development occur, they may be more related to prior changes in the affective domain than to cognitive intervention.

Should a significant relationship be established between powerlessness and success, the construct would have predictive utility under specific circumstances and prescribed conditons. More importantly, however, there would be

implications for the modification and future decisions of compensatory education programs. For example, it is possible that in many instances, the program structure or the counseling style may serve to confirm the disadvantaged student's belief in her/his own powerlessness. While the study is not addressed to the modification of control orientation, it might well provide the impetus to re-examine program development particularly with regard to styles of counseling intervention.

Review of Related Literature

The locus of control construct derives most directly from Rotter's social learning theory (Rotter, 1954), according to which the probability of a behavior occurring is a function of both the person's expectancy that the behavior will gain the available reinforcement and the value of the reinforcement to the individual. Effects of a reward on preceding behavior depend upon whether the person perceives the reward as contingent upon his own behavior or independent of it. When the reinforcement is seen as not contingent upon the subject's behavior, its occurrence will not increase the expectancy as much as when it is seen as contingent.

Rotter et al. (1962) posited a construct of locus of control to determine the degree to which the individual perceives that he, rather than someone or something else, causes his successes and failures in various situations. The Rotter (1966) Internal-External Control Scale was conceptualized and validated as a measure of the extent to which a person believes that his life is controlled by fate as opposed to being under his own personal control. The scale reflects the observer's judgments regarding the causes of the good and bad things that happen to him.

Rotter (1966) emphasized that the internal versus external control variable is primarily an expectancy construct concerned with an individual's beliefs about his world, his behavior, and his skills. It is not concerned specifically with the behavior itself. The locus of control construct is considered a generalized expectancy operating across a large number of situations and relating to whether or not the individual perceives that he possesses or lacks power over what happens to him. The belief that rewards follow from or are contingent upon one's own behaviors or attributes is internal locus of control. External control is attributed to those persons who perceive rewards as controlled by forces outside of one's self and therefore occurring independently of his or her own actions. Beliefs in internal

or external control are acquired by the individual as he differentiates those events which are related to his actions and those which are not.

Relationship to Achievement

Previous research has shown a relationship between locus of control and achievement motivation. According to Platt and Eisenman (1968), perceptions of internal locus of control are accompanied by a tendency to persist longer at certain tasks, to prefer skill-oriented tasks to those which are chance-determined, and to set goals at moderately higher levels than past performance. The work of McClelland, Atkinson, Clark, and Lowell (1953) also suggested the existence of a relationship between the need for achievement and perceived locus of control. They hypothesized that people who are high on need for achievement in all probability have high beliefs in their own ability or skill to determine the outcome of their efforts. Fanelli (1972) suggested the possibility that internal control orientation involves the need to predict one's outcomes as a motivational aspect. In their study internals generally adopted strategies which achieved control over both skill and chance outcomes, while externals took a more passive stance and were less concerned with their performance in either case.

Morrison (1966) found that when comparing internal and external students, the former had more positive attitudes toward both the teacher and classroom activites than did external students. In addition, the internals showed greater gains in achievement. Morrison also observed that the external students became more internal in time, while the internal students tended to remain the same. It was interesting to note that the children in the Morrison study reacted differently to various teaching methods in light of their internality or externality. Internal children tended to respond more readily in open learning situations than did their external peers.

Coleman et al. (1966), in a study of over a half million youngsters across the United States, found that a belief in destiny was a major determinant in school achievement. The report concluded that the pupil attitude factor had a stronger relationship to achievement than did all other school factors together. The summary stated that, for children from disadvantaged groups, achievement "appears closely related to what they believe about their environment: whether they believe the environment will respond to reasonable efforts or whether they believe it is, instead, merely random or immovable " (p. 28).

The construct of locus of control implies that skill or ability is a

key determinant of outcome for the individual who perceives himself as being internally controlled and that chance or fate is the more important causal factor for the individual who perceives himself as being externally controlled. Several studies using locus of control as a situation variable have dealt with learning under skill conditions. Phares (1957) reported that experiences of success or failure have greater impact on a person's future expectations of success if the subject felt that these experiences were due to his own skill rather than to chance. James (1957) found that when compared with chance-instructed subjects, the subjects receiving skill instruction had more stable, more predictable, and greater increments in expectancy statements of success. In discussing the James study, Morrison (1966) noted that "subjects scoring 'internal' on the Internal-External Control Scale acted more like subjects under skill instructions than did their external counterparts" (p. 15).

Previous research also has shown relationships between locus of control and performance in learning situations (Bialer, 1961; Lefcourt, 1966; Phares, 1957; Rotter, Seeman, & Liverant, 1962). It has been demonstrated (Gore & Rotter, 1963; Rotter & Mulry, 1965; Seeman & Evans, 1962; Strickland, 1963) that persons believing in their ability to control what happens to them (internals) are more active in their attempts to control their environment in an effective way. A number of additional studies (Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld, & York, 1966; Crandall, V. C., Katkovsky, & Preston, 1962; Fanelli, 1972; Hersch & Scheibe, 1967; McGee, Milgram, & Riedel, 1970; McGhee & Crandall, V. C., 1968; Morrison, 1966) have shown that school children who show internal locus of control have a higher achievement motivation, achieve higher grades, and obtain stronger scores on achievement tests.

Antecedent Conditions of Control Orientations

Several studies discuss those factors which seem to be involved in the origins of control orientations. In general, parents described as warm, praising, protective, and supportive have children with higher internal scores than do parents showing dominance, rejection, and criticism (Katkovsky, Crandall, V. C., & Good, 1967). In contrast, Cromwell, Rosenthal, Shakow, and Zahn (1961) demonstrated that the more subjects attributed protectiveness to their parents, the greater were their beliefs in external control. In another study Tolor and Jaloweic (1968) found that high external male freshmen perceived high maternal authoritarian control and hostile rejecting tend-

encies. Liverant and Scodel (1960) also reported a significant positive relationship between externality and dependency in college students. Fanelli (1972) noted that those parental behaviors which correlate with belief in internal control also correlate with a high level of need achievement.

Studies indicate that chronological age correlates positively but moderately with beliefs in internal locus of control (Bialer, 1961; Crandall, V. C., Katkovsky, & Crandall, V. J., 1965). Belief in internal locus of control has been thought to be a correlate of maturity and competence in children (Nowicki & Strickland, 1973). In general, chronological age appears not to be as significant a predictor of locus of control beliefs as mental age. Bialer (1961) suggested that "retarded children do not differ qualitatively from normal children in their perceptions of locus of control " (p. 319). He noted, as did Crandall, V. C. et al (1962) that children with higher mental age levels appeared to be more internally controlled than were their chronological age peers. Mental age appears to be a more relevant variable than chronological age, and there is an apparent tendency for retardates to be more externally controlled than their normal chronological age peers. In explaining this difference, Turnure and Zigler (1964) remarked that due to their many failure experiences, retarded individuals are distrustful of their own solutions to problems and thus tend to look for cues or solutions provided by others.

Rotter (1966) reported that, in studies with adults, sex differences on the internality-externality measure appeared to be minimal. In contrast, Crandall, V. C., et al. (1962) found that for children, the validity of using locus of control scores to predict performance in achievement areas varied according to sex. Scores were generally more predictive for boys.

Social class apparently has an effect on perceptions of locus of control, with lower classes believing more in the external control of events. Measures of locus of control sample social experiences and Crandall, V. C., et al. (1962) contended that the varying experiences of the different social classes were reflected in their scores. Battle and Rotter (1963) also found that social class was a significant factor. They found that lower-class blacks with higher intelligence ratings were more external than middle-class whites with lower tested intelligence. This reversal of the usual correlation of higher intelligence with higher internal scores was accounted for by the interaction of race and lower class. Studies (Battle & Rotter, 1963; Lefcourt & Ladwig, 1965) indicated that groups whose social position is one

of minimal power, whether for economic, cultural, or other reasons, tend to perceive these barriers in the way of their achievement of goals and will score in a more external direction on measures of locus of control.

A number of studies have been aimed at assessing the locus of control as it relates to specific populations in situations of social involvement. In general, "internals showed a significantly greater willingness to engage in remedial behaviors to confront their problems" (Phares, Ritchie, & Davis, 1968, p. 403). The type and degree of commitment behavior in black college students was significantly related to the internal-external dimension with internals being more involved in efforts to get social change (Gore & Rotter, 1963). Strickland (1965), in her experiment with black college students, demonstrated that those who saw themselves as basically in control of their own fate were more likely to make a commitment to social action. Seeman (1959) found that externally controlled prison inmates learned significantly less material relevant to release on parole. In a similar study related to alienation and powerlessness, Seeman and Evans (1962) found that tuberculosis patients who scored as internals were apt to be more enlightened regarding the disease and sought more information about it than did their fellow patients who were characterized as external. As part of a wider study, Cromwell et al. (1961) concluded that subjects who viewed events as being internally controlled were more likely to take advantage of autonomous conditions, respond more quickly, and adapt more easily to new environmental exigencies. Strickland (1970) noted that internals attend to outcomes, retain more relevant information, are more aware of environmental cues, and tend to resist subtle suggestions. Corah and Boffa (1970), as well as Use and Vogler (1969), agreed that externals do not adapt or learn as logically as internals.

In summary, how an individual responds in a particular situation depends in part on whether or not the situation is one which he perceives as being controlled by external forces or one in which his own skills or personal characteristics determine the success of his efforts. This variable should be predictive in the realm of long-range planning and control. Research cited above has reflected the idea that groups whose social power is minimal, whether by race or class, score higher on external control. The locus of control construct has been viewed as an indicator of success and failure expectations and studies related to achievement showed that external subjects generally earned lower academic achievement levels than internal subjects.

Research Questions

On the basis of the literature reviewed, the following research qeustions were asked:

1. Is there a significant difference in the scores earned on Rotter's I-E Control Scale by CD students who have different cuumlative grade-point averages? It was predicted that for these two limited group samples:

> Hi-Ach CD students will place on a continuum in the I-E scale which describes them as being more "internal" than the Lo-Ach CD students.

2. Is there a significant correlation between locus of control scores and background variables that reflected students' race, socio-economic status, family constellation, etc.? It was predicted that:

> Ss with external orientations would have been predisposed by conditons and characteristics associated with the student who is (a) male, (b) young, (c) single, (d) of ethnic minority background, (e) last born, (f) not intact family, (g) more brothers/sisters, (h) relatively low family income, (i) lower educational level attained by father/mother, (j) lower occupational level of father/mother, and (k) with unemployed mother (homebound).
>
> Conversely, Ss with internal orientations would have been predisposed by conditions and characteristics associated with the student who is (a) female, (b) older, (c) married, (d) of white ethnic background, (e) first born, (f) intact family, (g) less brothers/sisters, (h) middle family income level, (i) relatively high educational level attained by father/mother, (j) relatively high occupational level of father/mother, and (k) with employed mother (outside the home).

Method

Setting

The study was conducted at BCC with students of the College Discovery Program including both the Hi-Achievers (2.99 - 3.99 cumulative GPA) and those who were academically suspended (0.00 - 1.99 cumulative GPA) by the end of the Spring term, 1980. The students in both groups have cumulated 36+ credit hours completing at the very least their third semester in college and in the program.

The CD program at BCC, which was in its 13th year at the time the present study was conducted, consisted of a comprehensive arrangement of supportive services designed to enable students to move at an individually determined rate into and through the regular curricula of the college. Supplementary services were provided by paid tutors in group or private sessions paralleling the content covered in regular class courses. In addition, there was a staff of full-time counselors who worked with the students on a caseload basis.

Rotter's Internal-External Locus of Control Scale with biographical survey questions was given to students in the form of a general questionnaire as these students came to pick up their book vouchers or complete their class

TABLE 1. FREQUENCY DISTRIBUTION OF DEMOGRAPHIC VARIABLES
(CD Sample Spring 1980)

Variable	Characteristic and Percent				
Age (N = 85)	16 or under: 2	17-18: 49	19-20: 21	21-23: 14	24 or above: 14
Sex (N = 85)	Male: 35	Female: 65			
Ethnic Background (N = 85)	Black: 34	Hispanic: 46	White: 20		
Status (N = 85)	Single: 68	Married: 22			
Family Intactness (N = 85)	Lived with non-Parents: 15	Lived with Father: 8	Lived with Mother: 45	Lived with Both Parents: 32	
Number of Brothers (N = 85)	None: 25	One: 30	Two: 22	Three or More: 23	
Number of Sisters (N = 85)	None: 27	One: 33	Two: 19	Three or More: 21	
Ordinal Position (N = 85)	Last: 27	Between: 38	First: 29	Only Child: 6	
Family Income (N = 85)	2,000-2,999: 0	3,000-4999: 13	4,500-5,999: 13	6,000-7,999: 27	7,500-9,900: 16
	10,000-14,999: 21	15,000 or more: 10			

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TABLE 1. FREQUENCY DISTRIBUTION OF DEMOGRAPHIC VARIABLES
(CD Sample Spring 1980)

Variable	Characteristic and Percent			
Father's Education (N = 85)	Some Grade School 24	Finished Grade School 33	Some High School 25	
	Finished High School 9	Business or Trade School 7	Some College 2	
	Finished College 0	Attended Graduate or Professional School 0	Attended Graduate or Professional Degree 0	
Mother's Education (N = 85)	Some Grade School 13	Finished Grade School 9	Some High School 26	
	Finished High School 41	Business or Trade School 1	Some College 6	
	Finished College 4	Attended Graduate or Professional School 0	Attended Graduate or Professional Degree 0	
Father's Occupation (N = 85)	Unemployed 13	Unskilled 22	Semi-Skilled 24	Service 0
	Skilled 22	Salesman 13	Managerial 6	Professional 0
Mother's Occupation (N = 85)	Unemployed 21	Unskilled 23	Semi-Skilled 17	Service 10
	Skilled 29	Professional 0		
Mother's Employment Status (N = 85)	Employed 79	Unemployed 21		

tion and solution to a diversity of research questions). The use of a general model allows maximum flexibility, while retaining the strength and robustness of ordinary least squares (OLS). It is contended that to analyze the biographical data using analysis of variance or analysis of covariance alone, or discretely, would present problems of interpreting the given analysis (Rosenberg & Oltman, 1962).

The least squares analysis was performed using a step-wise procedure which is a mathematical algorithm that ranks the regressors according to how much of the variance in the regressand is accounted for, controlling for the other variables previously entered into the analysis. The purpose of using this technique was to aid in locating those variables which had the strongest empirical association with the regressand. To aid in interpreting the regression analysis, the regression coefficient is given along with its standard error of estimate (SEE). The standardized regression coefficient -- -- is included so that relative impact of that regressor can be readily seen.

The form in which the key variables are expressed may seem to be unorthodox in light of traditional educational research. Nevertheless, it can be shown that there is a need for the data to be transformed because it is typically non-normal with unstable variances (Safarik, 1974). To both stabilize and normalize the biographical data in this study, the variables which are expressed as frequency counts (sex, age, employment status, income, and the like) have been expressed in logarithms. The virtues of the logarithmic transformation are that it aids in stabilizing and normalizing badly skewed distributions, provides more useful theoretical interpretation, and more closely meets the assumptions of OLS. The logarithmic model assumes that a proportionate relationship exists between the regressors and the regressand. The coefficients that one obtains from the logarithmic model can be easily interpreted as percentages where the regression estimators measure the percentage change in the regressand associated with a percentage change in a regressor.

The regression analysis is presented in Table 4 with regressor and regressands. Those variables having estimators that are at least twice their respective standard errors were considered to be worthy of special note in the summary table. This is not to say that other variables not fitting these criteria should be ignored or discounted, but it is simply meant as an aid in presentation. The table summary of findings was derived by focusing upon those estimators that were at least twice their standard error of estimator. The order of the variable themselves are based upon the ad hoc results of the stepwise regressions algorithm. The regressional procedure was defined that variables were forced in first, then all other variables were allowed to be entered based upon their orthogonal contribution to explaining variance associated with locus of control scores.

Results

The intent of this study was to examine the relationships between locus of control and (1) academic achievement, and (2) a variety of characteristics of the sampled CD population. The data were analyzed statistically to determine the direction and strength of these relationships.

Relationship to Achievement

The measure of Ss's academic achievement was taken to be the cumulative grade-point average GPA) retrieved for each subject from the grade reports of the Spring term, 1980. Students were separately assigned to one of two a priori GPA categories: Hi-Ach = 2.99 - 3.99; Lo-Ach = 0.00 - 1.99. The number of students by Achievement categories and I-E means are reported in Table 2. Table 3 presents a t-test comparison of I-E scores for both groups of students. Analysis of the data supported the null hypothesis that the two groups were not significantly different ($p > .05$) and could, for the purposes of this study, be considered to have been drawn from the same population.

Antecedent Correlates of
Locus of Control Orientation

The two groups were combined for these subsequent analyses. To test the second hypothesis, regression analyses were computed using I-E scale scores as the predictor variable and responses to the biographical data questionnaire as dependent variables. The resultant F values indicate the amount of variance in the dependent variable that is associated with variation in I-E scale scores.

The summary of the steps in the multiple regression analysis will be centered around the three main statistics which summarize nearly everything that a regression analysis reveals (1) the coefficient of determination (R^2), (2) the standard error of estimate (S_{yx}), and (3) the beta coefficient (β). The significance of β was determined by the t test and the significance of the regression was determined by the F test. To determine the significance of adding a new variable at each step, the improvement in F was used.

The final step of the regression shows that the multiple correlation coefficient (R) is .73. To use a more easily understandable measure, the $R^2 = .73$. This in effect means that 73 percent of the variation in I-E scores is associated with the variations of the biographical data in the regression.

When "mother's employed status" alone is used in the first step, $R^2 = .18$. When "mother's occupational level/'skilled'," is included in the regression analysis, $R^2 = .14$; and when the third variable, "mother's educational level/'finished high school'," is added to the regression, the coefficient of $R^2 = .13$. With the addition of the variables in the last thirteen steps, the R^2 value does not substantially change. This indicates that by adding variables to the regression the power of predictability does not likewise increase significantly. The test for this significance is shown in the "F-to-Remove" column. For the first step, of course, the F test shows the

Table 2

Mean ($\bar{X}$) and Standard Deviation (SD) of Scores Earned By CD Students on the I-E Scale

	N	$\bar{X}$	SD
CD Hi-Ach (GPA = 2.99 - 3.99)	44	13.37	3.21
CD Lo-Ach (GPA = 0.00 - 1.99)	41	14.07	3.25
Total	85	13.62	3.14

Table 3

t-Test Comparison of I-E Scores for Students by Cumulative GPA

	N	Mean I-E Score	SD	*t*
CD Hi-Ach (GPA = 2.99 - 3.99)	44	13.37	3.21	-.95 (n.s.)
CD Lo-Ach (GPA = 0.00 - 1.99)	41	14.07	3.25	

$t_{(80;\ .05)} = 1.99$

Table 4. STEPWISE REGRESSION RUN FOR INTERNAL-EXTERNAL CONTROL ORIENTATION

Step No.	Variable Entered	Beta Weights	Standard Error of B	R^2	Increase in R^2	F to Remove
1	16 Mother's Employed Status	-0.6668	2.9500	0.1810	0.11810	19.22***
2	13 Mother's Educational Level/Finished High School	-0.4821	2.8479	0.1384	0.1384	16.43***
3	15 Mothers's Occupational Status/Skilled	-0.2794	2.7317	0.1297	0.1322	13.17***
4	7 Family Intactness/Lived with Mother	0.2649	2.7309	0.1204	0.0193	2.62
5	9 Number of Sisters (3 or more)	0.2539	2.7301	0.1201	0.0114	2.57
6	11 Family Income (6,000-7,900)	0.2357	2.7284	0.1170	0.0065	2.52
7	1 Age/Older	0.2157	2.7216	0.1162	0.0062	2.29
8	4 Ethnicity/Hispanic	0.1991	2.7108	0.1146	0.0061	2.03
9	6 Status/Married	0.1708	2.7099	0.1120	0.0054	1.72
10	3 Ethnicity/Black	0.1520	2.7053	0.1118	0.0045	1.59
11	2 Sex/Female	0.1419	2.7032	0.1103	0.0026	1.49
12	14 Father's Occupational Status/Skilled	0.1175	2.7030	0.1088	0.0024	1.09
13	8 Number of Brothers (3 or more)	0.1030	2.7024	0.1045	0.0015	1.03
14	12 Father's Educational Level/Finished Grade School	0.1019	2.7023	0.1033	0.0012	1.01
15	10 Ordinal Position/ First Born	0.1013	2.7021	0.1032	0.0011	1.01
16	5 Ethnicity/White	0.1011	2.7016	0.1027	0.0009	1.01

(Constant -33.4340; R^2 = .73)

***Significant at .001 level

the regression to be significant and well above the .001 level. With the addition of the second variable, F improves 16.43 $p < .001$. With the addition of the third variable, F improves 13.17 $p < .001$. With any addition of variables to the regression after the third step, no significant difference in the power to predict the I-E scores is obtained as indicated by the small improvement in F and by the fact that R^2 changes very little with the addition of the last thirteen variables.

As can be seen in Table 4, the S_{yx} for the first step is 2.9. For the second step, it decreases 0.1 and with the addition of a third variable, S_{yx} decreases another 0.1. After the third step, however, S_{yx} does not decrease which means that the other variables are not contributing anything to the power that the first three have. It could be said that with the information of the first three variables (i.e. mother's employed status, mother's occupational level/skilled, and mother's educational level/finished high school) socres on the I-E scale can be estimated $\pm$ 2.9 points 68 percent of the time.

The β for mother's employed status is $-0.67 < .01$. That is for each increase of 1 SD in mother's employed status, externality decreases (negative in direction) - .67 of 1 SD. With mother's employed status held constant, $\beta = -0.48 < .01$ for mother's occupational level. For each increase .48 of 1 SD in mother's level of occupation, the externality decreases (negative in direction) - .48 of 1 SD. For mother's educational level, $\beta = -0.28 < .01$. For each increase of .28 of 1 SD in mother's level of education completed, the externality score decreases (negative in direction) - 0.28 of 1 SD.

Of the sixteen explanatory variables included in the regression, only three have shown a significant relationship to I-E scores in the regression run conducted. The variable, "mother's employed status," claimed most of the variance reducing all other variables to the status of minor predictors. Variable No. 15 which reflects level of mother's occupation, and variable No. 13 relating to the level of education completed by the mother, show substantial but comparatively lower contributions to the variance in the locus of control scores of the students.

Discussion

Discussion in this section will focus on the relationship of locus of control to (1) academic achievement, and (2) the antecedent correlates of the internal vs external personality orientation of students.

Relationship to Achievement

Contrary to our expectations, there is an absence of a positive relationship between internality and measures of achievement in our sample. This runs counter to most previous research. However, a few studies (Butterfield, 1964; Milgram, 1971; Phares, 1973) have suggested that there may be limitations on this relationship which have not been noted because the relationship has not been cross-validated in sufficiently different samples of students. Thus, it is possible that high external scores represented a realistic appraisal of forces in the environment.

Recent studies (Collins, 1974; Forward & Williams, 1970; Gurin & Gurin, 1970; Gurin, Gurin, Lao, & Beattie, 1969) have challenged the positive versus negative interpretation of internal versus external control. The thesis that scoring high in internal expectancy need not be positive but in fact an unrealistic and unhealthy appraisal of reality, as well as the converse, that focusing on external forces may be realistic if such a perception is based upon comprehension of life forces, has direct application to disadvantaged students.

Internal locus of control as discussed in the literature also appears to have two possible interpretations. The first and most common is that the student believes in his ability to achieve goals which he has set for himself. Then, he may, in addition, perceive discrimination in the environment and not his own inadequacy as preventing him from meeting these goals. The locus of control construct appears to be more complex than a simple dichotomy between internal and external control. Research with groups whose social position is one of minimal power has demonstrated the need for new interpretations of the construct.

Crandall, V. C. et al (1965) investigated, at the elementary school level, children's perceptions of who is responsible for school success and failure. Results indicated that, depending upon the causal event, the pupil makes distinctions among his own control, control by other people, and control by impersonal forces. Based on these findings, they suggested that the causal relationships between responsibility for failure and responsibility for success might be two separate dimensions.

The work of Gurin et al (1969) also supported a multidimensional approach to locus of control. They acknowledged that internal control might overlap with concepts like competence and personal efficacy and that high

internal control might, therefore, be indicative of self-blame. The results also suggested that high external control might indicate a realistic appraisal of the external forces at work in the ghetto rather than the assumed belief that events are due to fate or chance.

Two other studies have suggested distinct dimensions within the external orientation of control. Hersch and Scheibe (1967) noted that individuals scoring internally on the internality-externality scale are more homogenous on tests of other personality correlates than are high-scoring external subjects. They have suggested that the diversity in the meaning of externality might be related to the subject's physical or intellectual weakness in relation to those around him. In summary, they suggested that an assessment be made of the effects of reality factors in a person's perception that events are beyond his control.

Collins (1974) has also suggested that superimposed on the internality-externality scale is a multi-dimensional continuum of externality. Like Rotter's single view of externality, any one of the four beliefs ("It's a difficult world; it's an unjust world; it's a random world; it's a politically unresponsive world ") postulated by Collins would inhibit coping and lower self-esteem. Perceived as a source of unpredictability in the environment, each of the distinct external factors above may prevent the individual from independently seeking out reinforcement and avoiding punishment.

Antecedent Correlates of Control Orientations

The demographic variable, "mother's employment status," claimed most of the variance reducing all other variables in the regression to the status of minor or inconsequential predictors.

There appears to be two important and fairly distinct dimensions of the mother role that are effective for the high internals: (1) the extent to which mother predominates the attitudinal socialization of the child toward the external world, and (2) the degree to which the mother exhibits attributes of social achievement of her own. The latter dimension implies that mothers possessing attributes of achived social status probably articulate their mother roles in quite distinctive ways, and they present quite distinctive images of the outside world to their children (Cromwell, Rosenthal, Shakow, & Zahn, 1961; Liverant & Scodel, 1960; Tolor & Jaloweic, 1968). The key elements here may be not only the degree and kinds of social involvements the mother has beyond the home setting but the status of her occupational and

community roles.

The one significant result of this study gives some credence to the position that views these effects of the mother's employment as dependent on the cultural values of the larger society. Because of the high value placed on economic success in the larger community, a mother's employment (particularly in working-class families where employment is an economic necessity) probably makes her an effective model and mediator to the outside world.

This would presumably be the case when the mother being the dominant member of the parental coalition influences the attitudinal level of the child's development. There is maternal salience with respect to shaping the child's basic attitudes toward powerlessness or effectivity especially if the mother is the single parent of the family.

The mother is not merely regarded as a particularized love object but she also conveys an image of social competence which generalizes not only to women at large but to all achieving roles. Put somewhat more concretely, the more the mother possesses attributes of achieved social status in her own right, rather than merely reflecting the social status of the husband-father, the more likely the offspring will be inclined to regard it right and to have access to achieved status on a par with other more priveledged ones.

Counseling Implications

In conceptualizing counseling style, the counselor as the "mother employed-surrogate " may find it convenient to classify the counseling process on a counselor-control - student-control continuum.

At one end of such a continuum is the situation in which the counselor has full control over the counseling process. At this end of the continuum, it is no exaggeration to post a model in which the counselor is the expert and the student's perceptions are anything but objective. In this counseling style, the student is neutral and acted upon figure and the counselor preaches to him from his own rigid orientation, insensitive to the student's presence.

At the other end of the continuum, it is possible for the student to take full charge of his personal, learning and counseling needs, with the assistance of some computer-based programmed materials. In this counseling style, given an extremely permissive environment, the student assumes self-direction as a challenge and makes full use of self-direction opportunities.

Along the middle of this hypothetical continuum, it is possible for the student to relate to the counselor and the counseling contents on an

individual basis and to obtain from the counselor, at will, any information, insights, and feedback in an order and sequence convenient to the needs of the student.

Extrapolating from the finding of this study, students who are high internals would derive considerable gains by being put in charge of their own learning, academic and career plans. Conversely, we may reasonably assume that if a student is a low internal, he would gain nothing from interacting with a counselor who directs and controls and takes over for the student. The student's low internality (high externality) becomes a handicap and the prevailing structure imposed by the counselor would inhibit the student's growth toward self-direction and responsibility for self.

What does this finding suggest for us who are involved with the disadvantaged minorities in College Discovery? The result suggests the need for a concerted effort to adopt certain (1) program policy and structure, and (2) counseling strategies designed to increase the students' sense of power to affect their destinies.

Program Policy & Structure

The creation of conditions likely to enhance feelings of powerfulness represent a formidable undertaking for program administrators since the genesis and malleability of the powerlessness construct are both relatively undefined areas. At this point, the specific conditions which have the potentials to alter one's control orientations are conjectural. While others are immersed in theoretical positions with respect to the malleability of the powerlessness construct, there is something the program administrators can implement in practice, i.e. elicit student perceptions with respect to the conditions and factors they believe are related to the sense of "being in control." The following areas need to be looked into:

(1) There is a need for a more balanced representation of minority counselors in responsible positions who will replicate for the student the experience of the "successful mother-modeling" figure.

(2) There is a need for more informational resources that will multiply students' options. Students lack an overview of the linkage between college programs and career options which limits their opportunity for long range planning and exercising control over their educational lives.

(3) There is a need for students to have a direct and meaningful voice in the decision-making process of the program. Students tend to believe

that the major decisions affecting their educational lives are made by powerful individuals who are removed from the realities of the day-to-day problems faced by the students.

Counseling Strategies

At the most general level, the result of this study suggests that student's achievement and expectations are embedded within a complex system of values and personality styles. Counselors may find that for some of their students, the tasks of their adult roles cannot proceed until the students gain a stronger sense of personal control over their own lives. Thus, the initial focus of the counseling relationship may be the development of more autonomous self-concepts and behavior.

The data also suggest that college students with external orientations will experience role conflicts when they anticipate their adult student roles. Societal pressures are in conflict with beliefs about student roles and the limited degree of autonomy and personal control over the future that students have. Counselors should be sensitive to the consequences that an external locus of control orientation may have on students' self-perceptions and plans in college. Counseling approaches that take these consequences into account may be more successful with externally oriented students.

It has been suggested that effective power cannot be given or nurtured; it must be taken (Blackman, 1962). On the other hand, it has been contended that individual counseling could enable students to perceive areas where they do exercise some control over their own environments (Lefcourt, 1965). Thus, new behaviors can be effective in gaining the reinforcement sought. Still another avenue of exploration is the area of contingency management where one is concerned with limiting the contingencies surrounding behavior so that the possible outcomes can be controlled, enabling the anticipation of consequences of the behaviors (Santa Rita, E., 1979). In short, the student is enabled to effect change in the events that govern his life, and to affect a contingency between events in his own life and the rewards available in the college or larger social system.

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